

Outcome of Surgical Treatment Pancreatitis

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ABSTRACT

Background: Abdominal pain is that the most distressing symptom of CP. CP in children is commonly unresponsive to medical therapy and should end in addiction to pain medication, dietary restrictions, and absences from school, and significant impairment of quality of life. It also features a negative impact on growth, nutrition and overall health. The aim and objectives is to evaluate the outcomes in surgically treated pancreatitis **Methods:** Data of all the participants who underwent a pancreatic surgery over a period of 2 years at our institution were retrieved from our prospectively maintained data-base. Total 50 subjects were included into the study. The identification of pancreatic ductal and/or parenchymal changes by ultrasonography, computed tomography scan of the abdomen, magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangio-pancreatography. **Results:** 93.9% population required hospitalization for pain management. 46.1% male population and 54% of female population reported with complete relief in pain. 32.9% population needed interventions prior to surgery, 27.2% had pancreatic duct stenting. **Conclusion:** Surgery is a safe and feasible option for children with chronic pancreatitis. In properly selected patients, it provides good short-and long-term pain control with fairly acceptable perioperative morbidity and mortality.

Keywords: Parenchyma, Ultrasonography, Computed Tomography, Magnetic Resonance Cholangiopancreatography, Endoscopic Retrograde Cholangiopancreatography.

INTRODUCTION

Although rare in children and adolescents, chronic pancreatitis (CP) may be a progressive disease resulting in irreversible damage of the pancreas. Abdominal pain is that the most distressing symptom of CP. CP in children is commonly unresponsive to medical therapy and should end in addiction to pain medication, dietary restrictions, and absences from school, and significant impairment of quality of life.^[1,2] It also features a negative impact on growth, nutrition and overall health. Steatorrhea and diabetes develop within the future.^[3] The multidisciplinary approach is required for the management of CP. There's no single therapy that has been shown to be effective to prevent progression of the disease. Thirty to half of patients require surgery during their lifetime. Surgical management of CP have made a dramatic progress over the past few decades due to a far better understanding of the pathophysiology of CP, the evolution of diagnostic methods, and improved outcomes of major pancreatic surgery. The goals of surgery for CP include: (1) pain relief, (2) control of pancreatitis associated complications of adjacent organs, (3) preservation of the maximum amount exocrine and endocrine functions as possible, (4) social and occupational rehabilitation, (5) improvement of quality of life. A perfect operation should address of these goals. Several surgical procedures are described for the treatment of CP.

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These are classified as either resectional or drainage procedures. Modified Puestow procedure remained the operation of choice for CP for about four decades. But within the past twenty years, procedures like Beger and Frey procedures are most typically performed operations for CP. Although, the results of surgery are well characterized in adults there's limited data in children, even in large pediatric surgical units.^[1,3-15] So we conducted a study to evaluate the outcomes in surgically treated pancreatitis.

MATERIALS AND METHODS

This is a retrospective observational study. Data of all the participants who underwent a pancreatic surgery over a period of 2 years at our institution were retrieved from our prospectively maintained data-base. Ethical clearance was obtained from the ethical committee of the institution and the written informed consents were also collected from the patients. Total 50 subjects were included into the study.

Inclusion Criteria-

Those who underwent surgery for CP

Exclusion Criteria-

Patients who underwent pancreatic surgery other than for CP (like trauma, for acute pancreatitis and tumour)

Diagnosis of CP-

The chronic pancreatitis was diagnosed on the basis of clinical features and the identification of pancreatic ductal and/or parenchymal changes by ultrasonography, computed tomography scan of the

abdomen, magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangio-pancreatography (ERCP). Clinical characteristics of patients, postoperative complications, and follow-up results were retrospectively reviewed.

Evaluation Criteria-

Postoperative complications were graded according to the Clavien-Dindo classification and in the follow-up visit, following parameters were recorded:^[16]

- Body weight
- Pain
- Analgesic requirement
- Need for enzyme supplementation
- Need for hospitalization
- Blood sugar (both fasting and postprandial)

RESULTS

Table 1: Clinical Characteristics of Patients (N = 50)

Outcome	Percentage
Pancreatic pseudocyst	11
Pancreatic ascites	2
Left-sided portal hypertension (SV thrombosis)	3
Biliary stricture	1
Peripancreatic arterial pseudoaneurysm	1
Interventions prior to surgery (%)	32.9
Pancreatic duct stenting	27.2
Arterial embolization	1
Pancreaticojejunostomy	2
Cystogastrostomy	1
Distal pancreatectomy + splenectomy	2
Abdominal pain (%)	100
Hospitalization for pain or complication (%)	93.9
Median number of hospitalization (n)	
Indication for operation	
Intermittent pain	66.5
Constant pain	28.5
Pancreatic ascites	4.9
Jaundice (%)	4.5
Weight loss (%)	60.1
Diabetes mellitus (n, %)	5.4
Exocrine insufficiency	0

Table 2: Predictors of pain relief postoperative

Variable	Complete pain relief (40)	Incomplete pain relief (10)	p-value
Sex (%)			0.701
Male	46.1	53.9	
Female	54.0	46.0	
Age at surgery (years)	14.11 ± 3.123	15.41 ± 2.146	0.858
Pain duration (months)	57.12 ± 38.061	36.42 ± 36.336	0.082
Previous surgery (n)	1	0	1.000
Alcohol Intake (n)	0	1	0.171
Smoker (n)	1	1	1.000
Endotherapy (%)	26.4	22.4	1.000
Local complication (%)	26.1	11.9	0.567
Calcification (%)	81.1	77.2	1.000
Continuous pain (%)	24.9	43.9	0.167

No. of hospitalization (n)	7.61 ± 14.286	16 ± 31.618	0.662
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Total 50 patients were included into the study in which 5.4 patients reported diabetes mellitus, 60.1% showed significant weight loss, 4.5% subjects developed jaundice, 28.5% complained for constant while 66.5% had intermittent pain and 93.9% population required hospitalization for pain management. 46.1% male population and 54% of female population reported with complete relief in pain. 32.9% population needed interventions prior to surgery, 27.2% had pancreatic duct stenting. 81.1% and 26.1% population showed calcification and local complications respectively. [Table 1 & 2]

DISCUSSION

In our study pain is the most disabling symptom in CP, pain relief is that the most appropriate outcome measured when evaluating the potential risks and benefits of any therapeutic procedure. The choice for surgical therapy of CP consists of pancreatic drainage procedures, resection or a mix of both. Choice of surgery depends on the anatomical abnormality, canal diameter or suspicion of malignancy. It also depends upon the selection and skill of the medico. Modified Puestow is that the procedure of choice in atrophic pancreatic parenchyma with dilated duct. Hybrid procedure like Frey and Beger procedures are useful where pancreatic head is bulky or related to inflammatory head mass. Izicki procedure is employed for little duct disease. In properly selected patients, pain relief will be achieved in majority of the patients. Within the present study, complete pain relief was obtained in 83% of patients which was the same as other reported series.^[17-19] With relevance safety, surgery for CP is related to an occasional operative mortality (range 0–3.5%) and morbidity rates (range 9–45%).^[11-14] In our study, perioperative mortality was nil and complications occurred in 17.9% of patients. Commonest complication in our study was wound infection and majority of the patients with wound infection had previous endoscopic therapy. Similar result was published by Choudhury et al.^[20] This will be explained by stent-related pancreatic ductal injury, stent occlusion and bacterial colonization of pancreatic secretion. Notably, the incidence of pancreatic fistula is low after surgery.^[13,21] In our study, clinically relevant pancreatic fistula developed in one patient. It may well be explained by the hard texture of pancreatic parenchyma (which holds the suture better) and decreased secretory capacity of the pancreas in CP. Like other studies, pseudocyst is the commonest local complication in our study. All ten patients were managed by pancreaticojejunostomy without a separate cystojejunostomy. There was no recurrence of pseudocyst within the follow-up period. The concept was supported by the insightful study of Nealon and Walsh.^[22] In our study, 10 patients had incomplete

pain control within the follow-up period. We don't find any such predictor for incomplete pain relief. This could be explained by differences in patient characteristics, treatment strategies and heterogeneity of follow-up protocol. Moreover, those data are from adult patients. One recent study from Johns Hopkins Hospital also did not show this association in statistical procedure in pediatric chronic pancreatitis patients.^[13] The duration of follow-up is a very important determinant of long-term pain control. Initial excellent result could also be blurred by delayed development of recurrent pain. Although the median follow-up of the current study was 48 months, previous couple of patients had follow-up duration of but 2 years. So, our outcome has to be assessed further within the succeeding follow-ups. Most of the adult series have shown that the incidence of new-onset DM and new-onset exocrine insufficiency depending upon the duration of follow-up and therefore the methods of identification.^[5-7,9] But in pediatric series, the incidence of new-onset DM and exocrine insufficiency following surgery for CP has been reported during a small proportion of patients particularly where total pancreatectomy with islet auto transplantation wasn't performed.^[2,18]

CONCLUSION

In conclusion, surgery is a safe and feasible option for children with chronic pancreatitis. In properly selected patients, it provides good short-and long-term pain control with fairly acceptable perioperative morbidity and mortality.

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